

NEW SYNONYMY AND NEW SPECIES OF AMERICAN BARK BEETLES (COLEOPTERA: SCOLYTIDAE), PART VI¹

Stephen L. Wood²

ABSTRACT—New synonymy of American Scolytidae is proposed as follows: *Corthylus* Erichson (= *Pseudocorthylus* Ferrari), *Hylesinus* Fabricius (= *Leperisinus* Reitter), *Monarthrum* Kirsch (= *Anchonocerus* Eichhoff), *Corthylus spinifer* Schwarz (= *Metacorthylus affinis* Fonseca, *Corthylus affinis* Fonseca), *Cryphalus ruficollis* Hopkins (= *Cryphalus amabilis* Chamberlin, *Cryphalus coloradensis* Wood), *Gnathotrichus retusus* (LeConte) (= *Gnathotrichus alni* Blackman), *Gnathotrichus sulcatus* (LeConte) (= *Gnathotrichus aciculatus* Blackman), *Hypothenemus eruditus* Westwood (= *Hypothenemus germari* Eichhoff, *Stephanoderes myrmedon* Eichhoff, *Stephanoderes inter-setosus* Eggers), *Hypothenemus seriatus* Eichhoff (= *Stephanoderes nitidulus* Hopkins, *Stephanoderes subopacicolis* Hopkins), *Hypothenemus obscurus* (Fabricius) (= *Stephanoderes asperulus* Eichhoff, *Stephanoderes cassiae* Eichhoff), *Pityophthorus annectens* LeConte (= *Pityophthorus citus* Blackman), *Pityophthorus balsameus* Blackman (= *Pityophthorus patchi* Blackman), *Pityophthorus briscoei* Blackman (= *Pityophthorus mundus* Blackman), *Pityophthorus cariniceps* LeConte (= *Pityophthorus cognatus* Blackman), *Pityophthorus confertus* Swaine (= *Pityophthorus agnatus* Blackman, *Pityophthorus comptus* Blackman), *Pityophthorus confusus* Blandford (= *Pityophthorus bellus* Blackman), *Pityophthorus consimilis* LeConte (= *Pityophthorus nudus* Swaine), *Pityophthorus fuscus* Blackman (= *Pityophthorus smithi* Schedl), *Pityophthorus immanis* Blackman (= *Pityophthorus sulcatus* Bright), *Pityophthorus murrayanae* Blackman (= *Pityophthorus gracilis* Swaine), *Pityophthorus cutleri* Swaine, *Pityophthorus exilis* Swaine, *Pityophthorus depygis* Blackman, *Pityophthorus watsoni* Schedl, *Pityophthorus auralentis* Bright), *Pityophthorus ornatus* Blackman (= *Pityophthorus limatus* Wood), *Pityophthorus pseudotsugae* Swaine (= *Pityophthorus thatcheri* Bright), *Pityophthorus pullus* Zimmermann (= *Pityophthorus bisulcatus* Eichhoff), *Scolytodes levis* (Blackman) (= *Ctenophorus laevigatus* Chapuis, *Scolytodes chapuisi* Wood). The following species are named as new to science: *Pityophthorus crotonis* (Venezuela), *Scolytodes constrictus*, *S. festus*, *S. praeceps* (Colombia), *S. canal-iculus*, *S. contractus*, *S. jucundus*, *S. opacus*, *S. opimus*, *S. serenus*, *S. suturalis*, and *S. varius* (Venezuela).

On the following pages several newly discovered cases of synonymy and 12 species new to science are presented for American Scolytidae. The species new to science represent the genera *Scolytodes* (11) and *Pityophthorus* (1) and were taken in Colombia (3) and Venezuela (9).

NEW SYNONYMY

Corthylus Erichson

Corthylus Erichson, 1836, Archiv. Naturgesch. 2(1):64 (Type-species: *Bostrichus compressicornis* Fabricius, subsequent designation by Ferrari, 1867, Die Forst- und Baumsuchtschädlichen Borkenkäfer, p. 48)

Pseudocorthylus Ferrari, 1867, Die Forst- und Baumsuchtschädlichen Borkenkäfer, p. 59 (Type-species: *Pseudocorthylus letzneri* Ferrari, sub-

sequent designation by Hopkins, 1914, Proc. U.S. Nat. Mus. 48:128). *New synonymy*

The name *Pseudocorthylus* has appeared in the literature for more than a century in either an uncertain status or as a subgenus of *Corthylus* Erichson. The types of the type-species of both genera were examined. *Pseudocorthylus letzneri* is a normal representative of the genus *Corthylus*. Consequently, *Pseudocorthylus* must be placed in synonymy under the older name as indicated above.

Hylesinus Fabricius

Hylesinus Fabricius, 1801, Syst. Eleuth. 2:390 (Type-species: *Hylesinus crenatus* Fabricius, subsequent designation by Westwood, 1838, Synopsis of the genera of British insects, p. 39)

¹Part of the research was sponsored by the National Science Foundation.

²Life Science Museum and Department of Zoology, Brigham Young University, Provo, Utah 84602.

Leperisinus Reitter, 1913, Wiener Ent. Zeit. 32(Bei-
heft):41 (Type-species: *Bostrichus fraxini* Pan-
zer=*Bostrichus varius* Fabricius, subsequent des-
ignation by Swaine, 1918, Dom. Canada Dept.
Agric. Ent. Br. Tech. Bull. 14(2):70). *New synonymy*

The genus *Hylesinus* Fabricius contains a diverse group of species from Europe to Australia, with a few species in north Africa and North America. *Leperisinus* was erected for a group of species, found mostly in *Fraxinus*, that differed from *Hylesinus crenatus* Fabricius by the conspicuously scalelike vestiture. After examining most of the species of *Hylesinus* from Europe and Asia and many others from Australia, Indonesia, and the Philippines, it became apparent that the scalelike or hairlike vestiture intergrades to such an extent that it is not a meaningful generic character. If *Hylesinus* were to be divided, the division should come elsewhere in the genus. In the absence of other generic characters, those species previously assigned to *Leperisinus* must be grouped with *H. crenatus* in the genus *Hylesinus*. Thus, *Leperisinus* must be placed in synonymy.

Monarthrum Kirsch

Monarthrum Kirsch, 1866, Berliner Ent. Zeitschr. 10:213 (Type-species: *Monarthrum chapuisi* Kirsch, monobasic)

Anchonocerus Eichhoff, 1878, Mém. Soc. Roy. Sci. Liège (2)8:431 (Type-species: *Anchonocerus rufipes* Eichhoff, monobasic). *New synonymy*

The holotypes of *Monarthrum chapuisi* Kirsch and *Anchonocerus rufipes* Eichhoff, a long series of the latter species, and more than 70 other species in this genus were examined. It is quite clear that *rufipes* falls well within the generic limits of *Monarthrum*. For this reason the name *Anchonocerus* must be placed in synonymy.

Corthylus spinifer Schwarz

Corthylus spinifer Schwarz, 1891, Proc. Ent. Soc. Washington 2:114 (Syntypes, females; Key West, Florida; U.S. Nat. Mus.)

Metacorthylus affinis Fonseca, 1925, Comissão de Estudo e Debellação da Praga Cafeeira, Pub. 12:3 (Syntypes; Itatiba, São Paulo, Brazil; not located?). *New synonymy*

Corthylus affinis Fonseca, 1927, Rev. Mus. Paul. 15(1):585 (Syntypes; Itatiba, São Paulo, Brazil; not located?). *New synonymy*

Corthylus affinis Fonseca, 1927 is an obvious duplication of the validation of *Metacorthylus affinis* Fonseca, 1925. Four presumed syntypes of Fonseca's species and numerous other specimens from Brazil clearly match the excellent illustrations of this species that accompany the original description. Part of this Brazilian material was compared to the syntypes of *Corthylus spinifer* Schwarz and other material from Florida, Central America, and northern South America. All represent one species. It is very probable that this species reached Florida through commerce from tropical America.

Cryphalus ruficollis Hopkins

Cryphalus ruficollis Hopkins, 1915, U.S. Dept. Agric. Rept. 99:40 (Holotype, female; Alta, Utah; U.S. Nat. Mus.)

Cryphalus amabilis Chamberlin, 1917, Canadian Ent. 49:321 (Lectotype, female; Elk Lake, Oregon; Canadian Nat. Coll., designated by Bright, 1967, Canadian Ent. 99:681). *New synonymy*

Cryphalus ruficollis coloradensis Wood, 1954, Univ. Kansas Sci. Bull. 36(2):1008 (Holotype, female; 7 miles N Grand Canyon Nat. Pk., Arizona; Snow Coll., Univ. Kansas). *New synonymy*

The type series of *Cryphalus ruficollis* Hopkins, *C. amabilis* Chamberlin, and *C. ruficollis coloradensis* and more than 300 other specimens were examined and compared. The supposed geographical character gaps observed by me in 1954 have been completely eliminated by subsequent collecting. Therefore, it is necessary to place *amabilis* and *coloradensis* in synonymy under the senior name as indicated above.

Gnathotrichus retusus (LeConte)

Cryphalus retusus LeConte, 1868, Trans. Amer. Ent. Soc. 2:155 (Syntypes; California; Mus. Comp. Zool.)

Gnathotrichus alni Blackman, 1931, J. Washington Acad. Sci. 21:271 (Holotype, female; Hoquiam, Washington; U.S. Nat. Mus.). *New synonymy*

Gnathotrichus alni Blackman was named from a population that breeds in *Alnus* in Washington and Oregon. Except for the host, I have been unable to find characters that distinguish it from *Gnathotrichus retusus* (LeConte), a common species in con-

iferous hosts in that area. Until biological characters can be found that distinguish *alni* from *retusus*, it should be placed in synonymy as indicated above.

Gnathotrichus sulcatus (LeConte)

Cryphalus sulcatus LeConte 1868, Trans. Amer. Ent. Soc. 2:155 (Holotype, female; middle California; Mus. Comp. Zool.)

Gnathotrichus aciculatus Blackman, 1931, J. Washington Acad. Sci. 21:272 (Holotype, female; Cloudcroft, New Mexico; U.S. Nat. Mus.). *New synonymy*

Gnathotrichus aciculatus Blackman was named from specimens having a deeply, narrowly sulcate elytral declivity. After examining 594 specimens of *G. sulcatus* (LeConte) from throughout its range, it was concluded that the *aciculatus* specimens represent an aberrant form of the species that intergrades completely with normal *sulcatus* specimens. Until biological or other characters can be found that justify recognition of this form, it should be placed in synonymy as indicated above. The type series of both were examined.

Hypothenemus eruditus Westwood

Hypothenemus eruditus Westwood, 1836, Trans. Ent. Soc. London 1(1):34 (Syntypes; England?; some in British Mus. Nat. Hist.)

Stephanoderes germari Eichhoff, 1878, Mém. Soc. Roy. Sci. Liège (2)8:159 (Syntypes?; Mexico; lost with Hamburg Mus.). *New synonymy*

Stephanoderes myrmedon Eichhoff, 1878, Mém. Soc. Roy. Sci. Liège (2)8:159 Holotype, female; Colombia; Inst. Roy. Sci. Nat. Belgique, Brussels). *New synonymy*

Stephanoderes intersetosus Eggers, 1928, Archiv. Inst. Biol. Def. Agric. Anim. 1:85 (Lectotype, female; São Paulo, Brazil; U.S. Nat. Mus., designated by Anderson and Anderson, 1971, Smithsonian Contrib. Zool. 94:16). *New synonymy*

The female holotype of *Stephanoderes myrmedon* Eichhoff and the female lectotype of *Stephanoderes intersetosus* Eggers were examined and compared directly to part of my series that was compared to syntypes of *Hypothenemus eruditus* Westwood. It is quite obvious that only one species is represented by this material. The type series of *Stephanoderes germari* Eichhoff was lost with the Hamburg Museum during World

War II; consequently, the only means of fixing the identity of this species, other than from the generalized description, is through the examination of specimens compared to the types before they were lost. Five such series were examined and all are conspecific with *eruditus*. For this reason, it was placed in synonymy as indicated above.

Hypothenemus seriatus (Eichhoff)

Stephanoderes seriatus Eichhoff, 1872, Berliner Ent. Zeitschr. 15:133 (Lectotype, female; New Orleans, Louisiana; Inst. Roy. Sci. Nat. Belgique, Brussels, designated by Wood, 1973, Great Basin Nat. 33:177)

Stephanoderes nitidulus Hopkins, 1915, U.S. Dept. Agric. Rept. 99:29 (Holotype, female; Cayamas, Cuba; U.S. Nat. Mus.). *New synonymy*

Stephanoderes subopacicolis Hopkins, 1915, U.S. Dept. Agric. Rept. 99:30 (Holotype, female; Cayamas, Cuba; U.S. Nat. Mus.). *New synonymy*

The female holotypes of *Stephanoderes nitidulus* Hopkins and *S. subopacicolis* Hopkins were examined and compared to my material that was previously compared by me to the female lectotype of *Hypothenemus seriatus* (Eichhoff). All of these specimens fall well within the range of variability of *seriatus*.

Hypothenemus obscurus (Fabricius)

Hylesinus obscurus Fabricius, 1801, Syst. Eleuth. 2:395 (Lectotype, female; Essequibo, British Guiana, published as *America meridionalis*; Copenhagen Mus.)

Stephanoderes asperulus Eichhoff, 1872 (nec. LeConte, 1868), Berliner Ent. Zeitschr. 15:133 (Lectotype, female; *Cassia*, probably from northern South America; Inst. Roy. Sci. Nat., Brussels, present designation). *New synonymy*

Stephanoderes cassiae Eichhoff, 1878, Mém. Soc. Roy. Sci. Liège (2)8:152 (Replacement name for *S. asperulus* Eichhoff). *New synonymy*

Three female syntypes of *Stephanoderes asperulus* Eichhoff are in the Chapuis Collection at the Brussels Museum. The first and third specimens were compared directly by me to my homotypes of *Hypothenemus obscurus* (Fabricius) and are conspecific. The second specimen is of *Hypothenemus seriatus* Eichhoff. I here designate the third syntype, which is in the best condition, as the lectotype of *asperulus* Eichhoff. This ac-

tion places Eichhoff's name in synonymy under *obscurus* (Fabricius), as indicated above.

Pityophthorus annectens LeConte

Pityophthorus annectens LeConte, 1878, Proc. Amer. Philos. Soc. 17:622 (Lectotype, female; Tampa, Florida; Mus. Comp. Zool., designated by Bright, 1976, Coleopt. Bull. 30:185)

Pityophthorus citus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:137 (Holotype, female; Chiricahua Mts., Arizona; U.S. Nat. Mus.). *New synonymy*

LeConte's series of syntypes of *Pityophthorus annectens* and 148 other specimens from the southeastern United States, Blackman's type series of *P. citus* from Arizona, 16 specimens from near Durango, Durango, Mexico (and several other Mexican specimens), and 22 specimens from Honduras were examined and compared directly. After much study and hesitation, it was concluded that all represent the same species. Consequently, the name *citus* must be placed in synonymy as indicated above.

Pityophthorus balsameus Blackman

Pityophthorus balsameus Blackman, 1922, New York St. Coll. For., Syracuse, Tech. Pub. 16:119 (Holotype, female; Orono, Maine; U.S. Nat. Mus.)

Pityophthorus patchi Blackman, 1922, New York St. Coll. For., Syracuse, Tech. Pub. 16:120 (Holotype, female; Orono, Maine; U.S. Nat. Mus.). *New synonymy*

The female holotypes of *Pityophthorus balsameus* Blackman and *P. patchi* Blackman and 108 other specimens were examined and compared. The female frons is variable and intergrades completely between the two named forms. Since *patchi* represents only a minor variant, it is placed in synonymy as indicated above.

Pityophthorus briscoei Blackman

Pityophthorus briscoei Blackman, 1922, New York St. Coll. For., Syracuse, Tech. Pub. 16:123 (Holotype, female; Brunswick, Maine; U.S. Nat. Mus.)

Pityophthorus mundus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:86 (Holotype, female; Littleton, New Hampshire; U.S. Nat. Mus.). *New synonymy*

The female holotypes of *Pityophthorus*

briscoei Blackman and *P. mundus* Blackman and 145 other specimens of this species were examined. The female frons is unusually variable and includes several forms, with all stages of intermediacy, in addition to those that have been named. Since *mundus* represents no more than a form that is well within the limits of variability for this species, it must be placed in synonymy as indicated above.

Pityophthorus cariniceps LeConte

Pityophthorus cariniceps LeConte, 1876, Proc. Amer. Philos. Soc. 15:353 (Holotype, female; Detroit, Michigan; Mus. Comp. Zool.)

Pityophthorus cognatus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:69 (Holotype, female; Davidson's R., North Carolina; U.S. Nat. Mus.). *New synonymy*

Blackman's series of *Pityophthorus cognatus* was composite. When two series of *P. crassus* Blackman, bearing only collection numbers on their labels, were removed from consideration, it became apparent that the male declivity was exactly the same as one variation found in male *P. cariniceps* LeConte. While the female frons of *cognatus* is usually radically different from *cariniceps*, a few specimens in a very long series from New Brunswick were as in *cognatus*, while others exhibited various stages of intermediacy or one of two forms common in *cariniceps*. In view of the extreme variability in the female frons and male declivity in this species and in the allied species of this group, it appears advisable to place *cognatus* in synonymy as indicated above.

Pityophthorus confertus Swaine

Pityophthorus confertus Swaine, 1917, Dom. Canada Dept. Agric. Ent. Br. Tech. Bull. 14(1):27 (Lectotype, female; Adams Lake, British Columbia; Canadian Nat. Coll., designated by Bright, 1967, Canadian Ent. 99:678)

Pityophthorus agnatus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:125 (Holotype, female; Cloudcroft, New Mexico; U.S. Nat. Mus.). *New synonymy*

Pityophthorus comptus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:127 (Holotype, female; Santa Catalina Mts., Arizona; U.S. Nat. Mus.). *New synonymy*

The female holotypes of *Pityophthorus confertus* Swaine, *P. agnatus* Blackman, and *P. comptus* Blackman and more than 3,000 other specimens of this species were examined. Very slight differences in the southern areas of the distribution were noted, represented by *agnatus* and *comptus*, but these are not sufficiently distinct to warrant sub-specific recognition. For this reason they were placed in synonymy as indicated above.

Pityophthorus confusus Blandford

Pityophthorus confusus Blandford, 1904, Biol. Centr. Amer., Coleopt. 4(6):237 (Lectotype, female; San Geronimo, Guatemala; British Mus. Nat. Hist., designated by Bright, 1976, Coleopt. Bull. 30:184)

Pityophthorus bellus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:123 (Holotype, female; Monongalia Co., West Virginia; U.S. Nat. Mus.). *New synonymy*

Blandford's syntypes of *Pityophthorus confusus* and 62 other specimens from Mexico, Guatemala, Honduras, and northwestern Nicaragua were examined and compared to the holotype and 306 specimens of *P. bellus* Blackman from the southern United States. They obviously represent the same distinctive species in which I see no basis for recognizing geographical races.

Pityophthorus consimilis LeConte

Pityophthorus consimilis LeConte, 1878, Proc. Amer. Philos. Soc. 17:622 (Lectotype, male; Marquette, Michigan; Mus. Comp. Zool., designated by Bright, 1976, Coleopt. Bull. 30:185)

Pityophthorus nudus Swaine, 1917, Dom. Canada Dept. Agric. Ent. Br. Tech. Bull. 14(1):30 (Lectotype, male; Ste. Anne de Bellvue, Quebec; Canadian Nat. Coll., designated by Bright, 1967, Canadian Ent. 99:678). *New synonymy*

The male lectotypes of *Pityophthorus consimilis* LeConte and *P. nudus* Swaine and 382 other specimens were examined. These names were based on the presence or absence of frontal vestiture in the female. Since the character is variable and complete intergradation in series is common, *nudus* should be placed in synonymy as indicated above.

Pityophthorus fuscus Blackman

Pityophthorus fuscus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:32 (Holotype, female; Glacier National Park, Montana; U.S. Nat. Mus.)

Pityophthorus smithi Schedl, 1931, Canadian Ent. 63:163 (Holotype, female; Copper Mountain, British Columbia; Canadian Nat. Coll.). *New synonymy*

The female holotypes of *Pityophthorus fuscus* Blackman and *P. smithi* Schedl and 16 other specimens were examined and compared directly to one another. Only one rare species is represented by this material.

Pityophthorus immanis Blackman

Pityophthorus immanis Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:98 (Holotype, female; Chiricahua Mts., Arizona; U.S. Nat. Mus.)

Pityophthorus sulcatus Bright, 1977, Canadian Ent. 109:528 (Holotype, female; Mt. Lemon, Pima Co., Arizona; Canadian Nat. Coll.). *New synonymy*

The female holotype and seven paratypes of *Pityophthorus immanis* Blackman from the Chiricahua Mts. (one paratype from Flagstaff, Arizona is of *P. crassus* Blackman) and the type series of 86 specimens of *P. sulcatus* Bright were examined. Following a careful study of this material it was concluded that only one species is represented. It is closely allied to *P. abiegnis* Wood.

Pityophthorus murrayanae Blackman

Pityophthorus murrayanae Blackman, 1922, New York St. Coll. For., Syracuse, Tech. Pub. 16:138 (Holotype, female; Grand Lake, Colorado; U.S. Nat. Mus.)

Pityophthorus gracilis Swaine, 1925, Canadian Ent. 57:195 (Holotype, female; Grant Co., Oregon; Canadian Nat. Coll.). *New synonymy*

Pityophthorus cutleri Swaine, 1925, Canadian Ent. 57:195 (Holotype, female; Merritt, Midday Valley, British Columbia; Canadian Nat. Coll.). *New synonymy*

Pityophthorus exilis Swaine, 1925, Canadian Ent. 57:196 (Holotype, female; Ochoco N. F., Oregon; Canadian Nat. Coll.). *New synonymy*

Pityophthorus depygis Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:128 (Holotype, female; Clyde, Colorado; U.S. Nat. Mus.). *New synonymy*

Pityophthorus watsoni Schedl, 1930, Canadian Ent. 62:197 (Holotype, female; Nictor Lake, New Brunswick; Canadian Nat. Coll.). *New synonymy*

Pityophthorus aurulentus Bright, 1966, Pan Pacific Ent. 42:301 (Holotype, female; Shell ridge at Walnut Creek, Contra Costa Co., California; California Acad. Sci.). *New synonymy*

The female frons of this species varies from convex to extensively flattened, with punctures moderately coarse to minute, and with or without vestiture. The vestiture, when present, may be minute to very long. Any combination of these variations may be found in pure culture in a local area or all may occur there. Following the study of the holotypes and type series of *Pityophthorus murrayanae* Blackman, *P. gracilis* Swaine, *P. cutleri* Swaine, *P. exilis* Swaine, *P. depygis* Blackman, *P. watsoni* Schedl, and *P. aurulentus* Bright, more than 2,000 other specimens, and numerous field observations, it was concluded that all represent the same species. Similar variability of the female frons occurs in *Pityophthorus cariniceps* LeConte, the *P. balsameus* complex of species, *Ips tridens* (Mannerheim), and *I. pilifrons* Swaine.

Pityophthorus ornatus Blackman

Pityophthorus ornatus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:102 (Holotype, female; Manitou, Colorado; U.S. Nat. Mus.)

Pityophthorus limatus Wood, 1964, Great Basin Nat. 24:65 (Holotype, female; Sanford Canyon, Dixie N. F., Utah; Wood Coll.). *New synonymy*

The female holotypes of *Pityophthorus ornatus* Blackman and *P. limatus* Wood and 111 other specimens were examined. Of the 10 series examined, 4 from Colorado and 6 from Utah, the host was *Picea pungens* for 8 of them; 2 were from *Pinus* and both appeared to be accidental associations. The population in Colorado has the vestiture on the female frons longer, particularly on the margins, and apparently less dense. The host and differences on the female frons led to the description of *limatus*. It is now recognized as a slight geographical variant and should be placed in synonymy as indicated above.

Pityophthorus pseudotsugae Swaine

Pityophthorus pseudotsugae Swaine, 1918, Dom. Canada Dept. Agric. Ent. Br. Tech. Bull. 14(2):99

(Holotype, female; BX Mountain, Vernon District, British Columbia; Canadian Nat. Coll.)

Pityophthorus thatcheri Bright, 1977, Great Basin Nat. 36:442 (Holotype, female; Big Sandy Meadow, S28, T5S, R2E, California; Wood Coll.). *New synonymy*

The female holotypes of *Pityophthorus pseudotsugae* Swaine and *P. thatcheri* Bright and more than 500 other specimens of this species were examined and compared directly to one another, including the entire type of series of *P. thatcheri* and several other specimens taken in series with it. It is apparent that the series named *P. thatcheri* was either accidental in *Pinus lambertiana* or else an error occurred in recording the host. These specimens are normal representatives of *P. pseudotsugae* and must be placed in synonymy as indicated above.

Pityophthorus pullus (Zimmermann)

Crypturgus pullus Zimmermann, 1868, Trans. Amer. Ent. Soc. 2:143 (Holotype, female; South Carolina; Mus. Comp. Zool.); Bright, 1976, Coleopt. Bull. 30:187 (?Lectotype)

Pityophthorus bisulcatus Eichhoff, 1869, Berliner Ent. Zeitschr. 12:274 (Holotype, sex?; America borealis; apparently lost with Hamburg Mus.). *New synonymy*

The type series of *Pityophthorus bisulcatus* Eichhoff apparently was lost in the destruction of the Hamburg Museum. Eichhoff (1878, Mém. Soc. Roy. Sci. Liège (2)8:185) indicated possible synonymy of his species with *P. pullus* Zimmermann. The size of *bisulcatus* was given as "¾ lin." (1.7 mm) in 1869, but 1.5 mm in 1878. If the 1.5 mm measurement is correct, it would almost certainly place *bisulcatus* in synonymy with *annectens*; if the 1.7 mm measurement is correct it might place it in synonymy with either *pullus* or *confusus* Blandford. Since the Eichhoff description does not treat anatomical areas that would distinguish *bisulcatus* from *confusus* or *annectens* (the only other species of comparable size from the southeastern United States where Eichhoff received specimens), it appears advisable to assume that Eichhoff, 1878, was correct and place his species in synonymy under *pullus*.

Scolytodes levis Blackman

Ctenophorus laevigatus Chapuis, 1869 (nec. Ferrari, 1867), Synopsis des Scolytides, p. 49 (Syntypes, males; Colombie; Brussels Mus.). *Preoccupied*

Hexacolus levis Blackman, 1943, Proc. U.S. Nat. Mus. 94(3174):382 (Holotype, female; Paraiso, Canal Zone, Panama; U.S. Nat. Mus.)

Scolytodes chapuisi Wood, 1977, Great Basin Nat. 37:210 (Replacement name). *New synonymy*

Ctenophorus laevigatus Chapuis was based on two male syntypes. These were compared to my long series from Colonia Tovar, El Laurel, and Ranch Grande, Venezuela, and apparently agree in all details. Females from my series were compared to the female holotype of *Hexacolus levis* Blackman and were found to be conspecific. Assuming that the association of males is correct, the name *levis* has priority and should be used to designate this species.

NEW SPECIES

Pityophthorus crotonis, n. sp.

This large species is remotely related to *Conophthorocranulus blackmani* Schedl, but is distinguished by numerous characters described below.

MALE.—Length 3.8 mm (paratypes 3.2–3.9 mm), 2.5 times as long as wide; color very dark brown.

Frons convex, an indistinct, feeble, transverse impression near middle; surface smooth, shining, coarsely, closely punctured; vestiture short, inconspicuous.

Pronotum 1.03 times as long as wide; sides almost straight and parallel on basal half, rather broadly rounded in front; anterior margin armed by 10 low serrations; summit at middle; anterior half with low, dense, confused asperities; posterior half smooth, shining, impressed points fine, abundant, punctures fine, rather close. Vestiture sparse, confined to marginal areas.

Elytra 1.4 times as long as wide, 1.4 times as long as pronotum; sides almost straight and parallel on basal two-thirds, broadly rounded (feebly bi-emarginate) behind; striae 1 weakly impressed; surface smooth, shining, punctures moderately coarse, close, confused. Declivity very steep,

rather broadly bisulcate; striae 1 very strongly, 2 strongly impressed, punctures in rows, fine, strongly impressed; interstriae 1 moderately elevated, broadly rounded, with dense impressed points and a few punctures, armed at base by a row of about four fine denticles, 2 slightly wider than 1, weakly convex, smooth, shining, with numerous impressed points, 3 elevated as high as 1, armed by a row of about 6–10 coarse denticles, lateral areas rather coarsely punctured. Vestiture apparently derived from odd-numbered interstriae, very long, absent on declivital interstriae 1.

FEMALE.—Similar to male except apparently smaller, denticles on anterior margin of pronotum and on elytral declivity smaller, striae punctures on disc usually in distinguishable rows.

TYPE LOCALITY.—Thirty km east of Merida, Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 93 paratypes were taken at the type locality on 8-I-1970, 2500 m, No. 220, *Croton* boles and limbs, by me. Two paratypes are from 20 km W Merida, Merida, Venezuela, 10-X-1969, No. 45, same elevation, host, and collector.

The holotype, allotype, and paratypes are in my collection.

Scolytodes canaliculus, n. sp.

This species is distinguished from the remotely allied *levis* Blackman by the larger size and by numerous other characters described below.

FEMALE.—Length 3.0 mm (paratypes 2.5–3.1 mm), 2.4 times as long as wide; color yellowish brown to light brown.

Frons uniformly, moderately convex; surface reticulate except smooth, shining, and impunctate on a subtriangular area extending from median third of epistomal area to an indefinite median point two-thirds of distance to upper level of eyes, reticulate area with rather numerous, fine punctures near margins of shining area; vestiture of fine, rather sparse, long hair on area below eyes. Eyes separated above by less than twice width of an eye. Antennal scape orna-

mented by a tuft of about 20 long setae.

Pronotum 1.0 times as long as wide; about as in *levis*; anterior slope unarmed, surface reticulate, punctures fine, rather close but distinctly larger than in *levis*.

Elytra 1.4 times as long as wide, 1.6 times as long as pronotum; sides straight on basal two-thirds, very slightly wider at base of declivity; striae not impressed except 1 moderately from base, punctures moderately coarse, rather deep; interstriae shining, almost smooth (obscurely reticulate in some areas), almost three times as wide as striae, punctures fine, close, uniseriate on 2 and 3, moderately confused on other interstriae. Declivity steep, shallowly sulcate; striae 1 strongly impressed; interstriae 1 convex, lateral areas ascending from striae 1 rather abruptly to rounded summit at striae 3; sculpture about as on disc. Vestiture of a few minute striae and interstitial setae (shorter than distance equal to diameter of a puncture), mostly on posterior half, and sparse rows of rather long interstitial setae on and near declivity.

MALE.—Similar to female except frons uniformly reticulate, shining area and most long setae absent, antennal scape without tuft of long hair.

TYPE LOCALITY.—La Carbonera Experimental Forest, about 50 km (airline) west of Merida, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 140 paratypes were taken at the type locality on 9-XII-1969, 2,500 m, No. 177, from *Clusia* branches, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes constrictus, n. sp.

This species is distinguished from *varius* Wood by the much finer pronotal and elytral punctures, by the greatly reduced female frontal pubescence, by the more nearly flattened elytral declivity, and by other characters described below.

FEMALE.—Length 2.7 mm (paratypes 2.5–2.8 mm), 2.8 times as long as wide; color al-

most black, some specimens with elytra uniformly dark brown.

Frons flat on lower two-thirds, moderately convex above; smooth and shining on flattened area, reticulate above, punctures fine, distinctly impressed; vestiture sparse, rather short, inconspicuous.

Pronotum 1.17 times as long as wide, sides widest one-fourth pronotum length from anterior margin, rather strongly constricted on posterior half; summit in front of middle, anterior slope finely, closely asperate; posterior areas mostly smooth, shining, some areas of weak reticulation in some specimens; punctures mostly fine, rather close, distinctly impressed. Vestiture of fine, long, moderately abundant, hairlike setae.

Elytra 1.7 times as long as wide, 1.5 times as long as pronotum; outline about as in *varius*; striae not impressed, punctures fine, spaced by twice diameter of a puncture; interstriae three times as wide as striae, smooth, shining, punctures slightly smaller and spaced equal to those of striae. Declivity rather steep, very broadly convex; sculpture similar to disc, but all punctures much smaller, striae not impressed. Vestiture as in *varius*, but slightly shorter.

MALE.—Similar to female except frons more strongly convex, with punctures finer.

TYPE LOCALITY.—Piedras Blancas, 11 km west of Medellin, Antioquia, Colombia.

TYPE MATERIAL.—The female holotype, male allotype, and 27 paratypes were taken at the type locality on 17-VII-1970, 2300 m, No. 688, from *Baccharus*, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes contractus, n. sp.

This species is distinguished from *varius* Wood by the slightly more slender body form, by the sparse, shorter, female frontal pubescence, and by the smaller pronotal and elytral punctures. It is distinguished from *constrictus* Wood by the brownish color, by the coarser pronotal and elytral punctures, and by the more convex declivity, with the striae clearly impressed.

FEMALE.—Length 2.8 mm (paratypes 2.5–

3.1 mm), 2.7 times as long as wide; color brown, anterior half of prothorax and head usually dark brown.

Frons as in *constrictus* except lateral areas reticulate to epistoma, punctures distinctly larger.

Pronotum as in *constrictus* except punctures distinctly larger.

Elytra as in *constrictus* except striae feebly impressed, punctures larger, closer, spaced by less than diameter of a puncture, interstriae twice as wide as striae, punctures closer, declivity more strongly convex, with striae weakly impressed and punctures slightly larger. Vestiture about as in *varius*.

MALE.—Similar to female except lower frons more distinctly convex.

TYPE LOCALITY.—Thirteen km southwest of El Vigía, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 34 paratypes were taken at the type locality on 22-X-1969, 100 m, No. 95, from a large vine (liana), by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes festus, n. sp.

This species is distinguished from *atratus* Blandford by the different frons in both sexes, by the much coarser punctures on the pronotum and elytra, and by the longer elytral setae.

FEMALE.—Length 2.8 mm (paratypes 2.5–2.8 mm), 2.0 times as long as wide; color black.

Frons almost flat to feebly concave on lower half, about as in *jucundus* Wood except reticulation less distinct, punctures slightly larger, less abundant.

Pronotum about as in *atratus* except punctures much larger, deep, interspaces equal to about twice diameter of a puncture. Glabrous except near margins.

Elytra about as in *atratus* except striae not impressed, striae and interstriae punctures slightly larger, mostly in rows, declivital striae not impressed, punctures much smaller than on disc, declivital tubercles smaller. Vestiture longer than in *atratus*, half as close, each seta on disc as long as

distance between rows, not longer on declivity; short recumbent striae hair present on lower and lateral areas of declivity.

MALE.—Similar to female except pronotal asperities larger, more abundant, frons very different. Frons similar to male *jucundus* except upper margin of transverse impression gradually elevated, lower margin abrupt, crest more uniformly elevated, median summit not evident.

TYPE LOCALITY.—Piedras Blancas, 11 km west of Medellín, Antioquia, Colombia.

TYPE MATERIAL.—The female holotype, male allotype, and nine paratypes were taken on 17-VII-1970, 2,300 m, No. 691, from petioles of fallen *Cecropia* leaves.

The holotype, allotype, and paratypes are in my collection.

Scolytodes jucundus, n. sp.

This species is distinguished from *atratus* Blandford by the larger size and by the different frons in both sexes and declivity as described below.

FEMALE.—Length 3.3 mm (paratypes 3.0–3.5 mm), 2.1 times as long as wide; color very dark brown to almost black.

Frons about as in *atratus* except surface between punctures reticulate, median callus entirely absent on lower half.

Pronotum 1.1 times as long as wide; about as in *atratus* except reticulation slightly more strongly impressed, punctures slightly more numerous.

Elytra 1.3 times as long as wide, 1.5 times as long as pronotum; about as in *atratus* except striae less distinctly impressed, all punctures slightly smaller, granules on declivity slightly smaller, setae more widely spaced, apparently shorter.

MALE.—Similar to female except frons above level of antennal insertion convex, reticulate, rather finely punctured; area at level of antennal insertion broadly, rather strongly, transversely impressed, lower margin of impression forming a transverse crest above flattened epistomal area, crest with a median and a pair of lateral low summits; pronotal asperities larger and more numerous than in female.

TYPE LOCALITY.—Ranch Grande, Aragua, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 17 paratypes were taken at the type locality on 9-IV-1970, 1,100 m, No. 403, from petioles of fallen *Cecropia* leaves, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes opacus, n. sp.

This species is distinguished from *opimus* Wood by the smaller size, by the darker color, and by other characters described below.

FEMALE.—Length 3.0 mm (paratypes 2.5–3.0 mm), 2.0 times as long as wide; color very dark brown.

As in *opimus* except frons more distinctly convex, granules on elytral disc slightly larger, punctures on sides of elytra slightly larger, deeper, elytral vestiture slightly stouter, shorter.

TYPE LOCALITY.—Merida, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 93 paratypes were taken at the type locality between Teleferico Stations 2 and 3 on 27-II-1970, near 3,000 m, No. 331, from the 10 cm bole of a tree with extremely large, simple leaves, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes opimus, n. sp.

This species represents the extreme expression of characters in a group of species allied to *punctatus* Eggers. Superficially it resembles *Gymnochilus*, but fundamental characters clearly place it in *Scolytodes*. It is distinguished by the large size, by the stout form, and by the contour and sculpture of the elytra. Some of Eggers' "*Problechilus*" species are closely related.

FEMALE.—Length 3.3 mm (paratypes 2.7–3.5 mm), 1.9 times as long as wide; color brown.

Frons almost flat below level of antennal insertion, an indistinct, transverse impression

above this point, weakly convex above; a low, oblique carina from margin of antennal insertion to lateral part of epistomal margin; surface strongly reticulate, punctures very fine, moderately close, those above level of antennal insertion finely granulate; vestiture of short, fine, moderately abundant, inconspicuous hair.

Pronotum 1.0 times as long as wide, subcircular in outline; evenly, rather strongly arched from anterior margin to base; anterior margin armed by a row of about a dozen fine serrations; surface reticulate; anterior area armed by numerous small, isolated asperities, these decrease in size but not in density, disappear on basal fifth, and are replaced by fine, close, moderately deep punctures. Vestiture fine, short, inconspicuous, covering entire surface.

Elytra 1.15 times as long as wide, 1.4 times as long as pronotum; sides weakly arcuate and subparallel on basal two-thirds, broadly rounded behind; declivity commencing on basal third near suture, near middle in lateral areas; striae not impressed, punctures very minute, distinct; interstriae smooth, shining, about 6 to 10 times as wide as striae, punctures similar to those of striae, confused, those near declivity granulate (subvulcanate). Declivity gradual on upper half, steep below, convex except shallowly sulcate toward striae 1; striae 1 moderately, rather broadly impressed, ascending gradually to striae 3; sculpture as on disc, most punctures on interstriae 1 and 2 weakly, irregularly subvulcanate. Vestiture of moderately abundant hair, setae on declivity short, longer on disc, with many interstitial setae on disc exceedingly long (these long setae abraded on older specimens).

MALE.—Similar to female in all respects.

TYPE LOCALITY.—La Carbonera Experimental Forest, about 50 km (airline) west of Merida, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 27 paratypes were taken at the type locality on 9-XII-1969, 2,500 m, No. 172, from an unidentifiable vine (liana) 5–8 cm in diameter, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes praeceps, n. sp.

This species is distinguished from *canaliculus* Wood by the very different frons and elytra as described below.

FEMALE.—Length 2.8 mm (paratypes 2.4–2.8 mm), 2.4 times as long as wide; color dark brown.

Frons weakly convex, median half from epistoma to three-fourths distance to upper level of eyes smooth, shining, impunctate, lateral and upper areas finely, rather closely punctured; vestiture of moderately abundant, very long hair on punctured areas. Eyes rather widely separated above. Antennal scape with about a dozen long setae.

Pronotum about as in *canaliculus* except punctures larger, closer, interspaces slightly wider than diameter of a puncture.

Elytral outline about as in *canaliculus*; striae not impressed, punctures rather small, deep; interstriae smooth, shining, three times as wide as striae, punctures mostly uniseriate, a few of those on 1 and 2 near declivity finely granulate. Declivity very steep, broadly convex; striae 1 moderately, 2 and 3 weakly impressed; sculpture about as on disc except interstriae 1–3 each with a row of fine granules on upper two-thirds. Vestiture of minute stria hair and rows of stout, erect, rather closely spaced bristles; each bristle on disc about as long as distance between rows, on declivity about two-thirds this length.

MALE.—Similar to female except frons more strongly convex, uniformly reticulate, vestiture sparse, inconspicuous.

TYPE LOCALITY.—Piedras Blancas, 10 km east of Medellin, Antioquia, Colombia.

TYPE MATERIAL.—The female holotype, male allotype, and 11 paratypes were taken at the type locality on 15-VII-1970, 2,500 m, No. 660, from a *Clusia* branch, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes serenus, n. sp.

This species is distinguished from *levis* (Blackman) by the much larger size, by the

weak pronotal asperities, and by the larger pronotal and elytral punctures.

FEMALE.—Length 2.8 mm (paratypes 2.6–3.0 mm), 2.5 times as long as wide; color pale brown, elytra usually yellowish brown.

Frons as in *levis* except more strongly flattened to vertex (not receding).

Pronotum similar to *levis* except anterior third very finely asperate (asperities visible only when light comes from appropriate angle); reticulation on posterior areas coarser, punctures slightly larger. Glabrous.

Elytra similar to *levis* except stria and interstitial punctures larger and deeper; interstriae about four times as wide as striae, punctures spaced by one to two diameters of a puncture, about as large as those of striae, in almost definite rows; sculpture on declivity about as on disc except all punctures slightly smaller.

MALE.—Similar to female except frons weakly convex on upper two-thirds, subglabrous, pronotal asperities distinctly larger.

TYPE LOCALITY.—La Mucuy, 20 km west of Merida, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 37 paratypes were taken at the type locality on 10-X-1969, 2,500 m, No. 46, from a Martiño branch (presumably *Meriana* sp.), by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes suturalis, n. sp.

This species is distinguished from *atratus* (Blandford) by the slightly smaller size, by the different frons in both sexes, by the slightly larger pronotal punctures, and by the very different elytra.

MALE.—Length 2.7 mm (paratypes 2.5–2.7 mm), 2.1 times as long as wide; color very dark brown.

Frons about as in *jucundus* Wood except punctures fine, transverse impression larger, much deeper, transverse crest much higher, subacute, almost uniformly elevated; upper areas reticulate, rather coarsely punctured; vestiture inconspicuous.

Pronotum about as in *atratus* except punctures slightly larger, interspaces aver-

aging three to four diameters of a puncture.

Elytra resembling *atratus*. Striae 1 strongly impressed on posterior three-fourths, others narrowly, weakly impressed, punctures very fine, subconfluent, rows not straight; interstriae about five times as wide as striae, smooth, shining, punctures mostly replaced by rounded granules almost to base, uniseriate. Declivity slightly steeper than in *atratus*, striae narrowly, rather deeply impressed, punctures as large as on disc but not as close, interstriae more narrowly convex, granules slightly closer, more regular, vestiture much stouter, slightly longer, extending to base.

FEMALE.—Similar to male except lower frons about as in *jucundus* except more distinctly concave, reticulation absent; striae impressions not as strong as in male and granules smaller, particularly on disc.

TYPE LOCALITY.—El Laurel Experimental Farm, 12 km southwest of Caracas, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and five paratypes were taken at the type locality on 1-V-1970, 1,300 m, No. 461, from petioles of fallen *Cecropia* leaves, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes varius, n. sp.

This species apparently is allied to *punctatus* Eggers, but it is distinguished by the slender body form, by the narrower posterior third of the pronotum, and by numerous other characters described below.

FEMALE.—Length 2.7 mm (paratypes 2.5–3.1 mm), 2.5 times as long as wide; color very dark brown except yellowish brown on intestriae 2–4 to 2–6 and declivity; males yellowish brown except anterior third of pronotum darker.

Frons broadly flattened to feebly concave from epistoma to upper level of eyes; surface smooth, shining, rather coarsely, closely, almost uniformly punctured except a median, impunctate callus on median fourth at level of antennal insertion; vestiture moderately abundant, fine, very long.

Pronotum 1.12 times as long as wide; widest on anterior half, sides weakly constricted, anterior margin semicircularly rounded, unarmed; anterior slope finely, closely asperate; posterior areas coarsely, rather closely punctured, surface obscurely, irregularly subreticulate. Vestiture fine, very long, rather abundant.

Elytra 1.5 times as long as wide, 1.4 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae not impressed, punctures moderately coarse, deep, spaced by diameter of a puncture; interstriae shining, almost smooth, punctures uniseriate, as close as and almost as large as those of striae. Declivity steep, broadly convex; sculpture as on declivity except punctures very slightly smaller. Vestiture of fine, long striae and interstriae hair, some interstriae setae three or more times as long as distance between rows.

MALE.—Similar to female except color uniformly pale over most of body, frons distinctly convex on upper half, its vestiture sparse, inconspicuous.

TYPE LOCALITY.—La Mucuy, 20 km west of Merida, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 116 paratypes were taken at the type locality on 12-XI-1969, 2,500 m, No. 129, from a tree branch, by me.

The holotype, allotype, and paratypes are in my collection.